

5-Wire Perimeter Light Programming Reference Sheet

Wiring and Connections

Wire Color	Function
Red	Primary Function Activation
Red/White or Orange	Secondary Function Activation
White to Power*	Function Modifier (except 4x2) Tertiary Function Activation (4x2 only)
White to Ground	Programming
Black	Connect to Ground
Green to other Greens	Sync 2 (synchronize up to 24 lights)
Green to Ground	bluePRINT/External Control Mode



*A fuse is required when used as a function modifier (except 4x2) or standalone trigger (4x2 only).

Basic Programming

Basic programming requires the red, red/white, or orange wire to be active and the light displaying a flashing pattern. The ground wire must be connected to a ground source. The white wire acts as the programming wire when momentarily connected to ground (see below). Programming will not work when the light is in steady, low power, or cruise mode.

SETUP TABLE				
Seconds		User Interface		Added Notes
From	To	Visual Feedback	Action	
0	1	Steady On - High Brightness	Advance One Pattern	Tapping the white wire to ground, or holding to ground for 0-1 seconds advances the light forward one pattern. Patterns lists are covered on page 3. Note: since lights can be custom ordered with patterns pre-set, the pattern displayed may not be pattern #1.
1	2	Steady On - Low Brightness	Go Back One Pattern	Holding the white wire to ground for 1-2 seconds will move the light back one pattern. Patterns lists are covered on page 3. Note: since lights can be custom ordered with patterns pre-set, the pattern displayed may not be pattern #1.
2	3	Light Off	Toggle Color Swap	Holding the white wire to ground for 2-3 seconds will change which color flashes first. When color swap is inactive, the first color (read on the packaging) will flash first. When color swap is active, the second color will flash first. On page 3 is a process to decipher which color is first or second in any given light. Note: this feature does not apply to single color lights.
3	4	Steady On - High Brightness	Toggle Simultaneous or Alternate	Holding the white wire to ground for 3-4 seconds will toggle the light from simultaneous flash to alternate flash. This is most noticeable when both lights have their green wires tied together.
4	5	Steady On - Low Brightness	Move Function Table Forward One	Holding the white wire to ground for 4-5 seconds will advance the function table one position. Each function table provides different uses for the light. When the last function table is reached, advancing again moves back to function table 1. Each time the light advances a table, it will wink a number of times equal to the table it is currently on. See the next page for a description of function tables and use.
5	6	Light Off	Reset to Pattern #1	Holding the white wire to ground for 5-6 seconds resets the pattern back to position #1. All other functions are preserved (Color Swap, Simultaneous/Alternate/Function Table).
6	7	Steady On - High Brightness	Reset Light to Factory Default	Holding the white wire to ground for 6-7 second performs a factory reset: - Pattern set to #1 - Color Swap set to Off - Simultaneous/Alternate set to Simultaneous - Function Table set to Table 1
7	8	Steady On - Low Brightness	Lock White Programming Wire	Holding the white wire to ground for 7-8 seconds locks the programming wire to prevent accidental programming. To unlock, tap the wire to ground 8 times within 5 seconds.
If held longer than 8 seconds, the light will resume flashing the current pattern and no action will be taken.				

Advanced Programming

Each light has different operating modes, determined by the current function table in which the light is currently running. By default, lights ship using function table one, which has the most common use in mind.

Function tables are a permanent operating mode, meaning once it is set, the light will operate in that mode moving forward or until the operating mode is changed. See the white wire in the Basic Programming table for instructions to advance from one table to the next.

The three tables to the right show examples of the various modes of operation for lights in their standard state, based on the number of colors available to the light. Each table demonstrates the function of individual wires or combinations of wires. These tables account for most lights, although some deviate based on the light type and capabilities. The complete instruction set for each light shows the exact operating modes available to the light. The following page has hyperlinks to the complete instructions for each light available from SoundOff Signal that utilizes function tables.

The most common wire combinations for each table are **shown in bold**.

Most lights offer custom programming when ordering (using the light configurator) or can be programmed to custom modes in the field using ConfigureIT. When using this process, individual wires or combinations of wires can be customized to work best with the installation (including which combinations of wires are prioritized). This allows the upfitter or end-user to make their own function table that allows the light to operate in ways not covered by the default function tables for the light.

Special note regarding the white wire: any time this wire is grounded, the light will enter programming mode. This includes a circuit that rests at ground.

In this scenario, it is possible to accidentally reprogram the light because a primary function wire (red, red/white, or orange) being active while the white wire rests at ground. To avoid this, enable the white wire lockout feature described on the previous page. The lockout feature can also be enabled in ConfigureIT.

FUNCTION TABLE 1					
WIRE COLOR			LIGHT FUNCTION		
Red	Red/Wht or Org	Wht	SINGLE	DUAL	TRI
+9-32v			Flash Color 1	Flash Color 1 & 2	Flash All Colors
	+9-32v		Cruise Color 1	Steady Color 2	Steady Color 3
+9-32v	+9-32v		Flash Color 1 Low Power	Steady Color 2	Steady Color 3
		+9-32v	No Operation	No Operation	No Operation
+9-32v		+9-32v	Flash Color 1 Low Power	Flash Color 1	Flash Color 1
	+9-32v	+9-32v	Cruise Color 1	Flash Color 2	Flash Color 2
+9-32v	+9-32v	+9-32v	Flash Color 1 Low Power	Flash Dual	Flash Color 3

FUNCTION TABLE 2					
WIRE COLOR			LIGHT FUNCTION		
Red	Red/Wht or Org	Wht	SINGLE	DUAL	TRI
+9-32v			Flash Color 1	Flash Color 1	Flash Color 1 & 2
+9-32v		+9-32v	Cruise Color 1	Flash Color 1 & 2	Flash All Colors
	+9-32v		Steady Color 1	Steady Color 2	Steady Color 3
	+9-32v	+9-32v	Steady Color 1	Steady Color 2	Steady Color 3
+9-32v	+9-32v	+9-32v	Steady Color 1	Steady Color 2	Steady Color 3
		+9-32v	No Operation	No Operation	No Operation
+9-32v	+9-32v		Steady Color 1	Steady Color 2	Steady Color 3

FUNCTION TABLE 3					
WIRE COLOR			LIGHT FUNCTION		
Red	Red/Wht or Org	Wht	SINGLE	DUAL	TRI
+9-32v			Flash Color 1	Flash Color 1 & 2	Flash All Colors
	+9-32v		Flash Color 1 Low Power	Flash Color 1 & 2 Low Power	Flash All Colors Low Power
+9-32v	+9-32v		Flash Color 1 Low Power	Flash Color 1 & 2 Low Power	Flash All Colors Low Power
		+9-32v	No Operation	No Operation	No Operation
+9-32v		+9-32v	Flash Color 1 Low Power	Flash Color 1 & 2 Low Power	Flash All Colors Low Power
	+9-32v	+9-32v	Flash Color 1 Low Power	Flash Color 1 & 2 Low Power	Flash All Colors Low Power
+9-32v	+9-32v	+9-32v	Flash Color 1 Low Power	Flash Color 1 & 2 Low Power	Flash All Colors Low Power

Description of Light Functions

Flash Color X - The light flashes the specified colors using the pattern determined under basic programming.

Flash Color X Low Power - In addition to flashing the specified pattern and colors, the brightness is reduced to 60% of full intensity - except where light certification is required (i.e., a light sold as ECE or CA XIII certified may have a different low power brightness).

Steady Color X - The light turns on steady at full intensity.

No Operation - With the exception of mpower® Fascia 4x2, all lights do not have function when power is applied only to the white activation wire. For more information on 4x2, please see the full set of instructions for that light.

Deciphering the Light Label Tag

The tag printed on the box or bag that each light ships in provides a bit of information about the light.

Color Order - The function tables indicate operations such as "Flash Color 1," or "Steady Color 2." To determine what Color 1, 2, and 3 are, just look at the tag. The first color indicated is color 1. The second is color 2, and so on.

Optic & Certification Type - SoundOff Signal lights are developed with different certifications and optics. This can have an impact on both the lens type, reflector type, and available patterns to the light. In the example to the right, the light is shipped with SAE optics, certification, and patterns.



Pattern Lists

The table below shows the different patterns that are available to each type of light. It is broken down with rows indicating the pattern name and number for that light, and columns based on the light certification. Please note - not all light types, certifications, or patterns are available in all areas. Bold text indicates the default pattern for each light type.

FLASH PATTERNS								
Pattern #	S.A.E. LIGHTS			E.C.E. LIGHTS		S.A.E. / E.C.E. LIGHTS		
	Pattern Name	SAE Compliant	CA XIII Compliant	Pattern Name	ECE Compliant	Pattern Name	SAE Compliant	ECE Compliant
1	Quint (Default)	x		ECE Single Flash (Default) †	x	Quint	x	
2	Warp			ECE Double Flash †	x	Warp		
3	Inter-Cycle			ECE Triple Flash †	x	Inter-Cycle		
4	Double	x				Double	x	
5	Quad	x				Quad	x	
6	Power Pulse	x				Power Pulse	x	
7	Road Runner	x	x			Road Runner	x	
8	Q-Switch	x				Q-Switch	x	
9	Steady Burn Road Runner Simultaneous - Steady Burn Alternate - Road Runner	x	x			Steady Burn Road Runner Simultaneous - Steady Burn Alternate - Road Runner	x	
10	Steady Burn Quad Simultaneous - Steady Burn Alternate - Road Runner	x	x			Steady Burn Quad Simultaneous - Steady Burn Alternate - Road Runner	x	
11	Quad 2	x				Quad 2	x	
12	Double 2	x	x			Double 2	x	
13	Random 1					Random 1 *		
14	Random 2					Random 2 *		
15	Quad Pulse-Pop	x	x			Quad Pulse-Pop †	x	x
16						ECE Single Flash (Default) †		x
17						ECE Double Flash †		x
18						ECE Triple Flash †		x

*Applies to dual and tri color only. †Only available to 4x2" lights with SAE and ECE patterns. ‡ECE patterns are only compliant when flashing a single color.

Direct Links to Light Instruction Sheets

mpower® Fascia and HD

- [mpower® Fascia 3" & 4" SAE Patterns](#)
- [mpower® Fascia 3" & 4" ECE Patterns](#)
- [mpower® Fascia 4x2 SAE Patterns](#)
- [mpower® Fascia 4x2 ECE Patterns](#)
- [mpower® HD SAE Patterns](#)

mpower® & P-Series Fire/EMS Lights

- [mpower® 6x4 and 7x3 Warning SAE Patterns](#)
- [mpower® 6x4 and 7x3 STT](#)
- [mpower® 6x4 and 7x3 Reverse](#)
- [P-Series 6x4 and 7x3 Warning SAE Patterns](#)
- [P-Series 6x4 and 7x3 STT](#)
- [P-Series 6x4 and 7x3 Reverse](#)

Other Lights

- [Intersector Surface Mount SAE Patterns](#)
- [Intersector Under Mirror SAE Patterns](#)
- [nFORCE® Deck/Grill Mount SAE Patterns*](#)
- [Universal Undercover® SAE Patterns](#)

*nFORCE® has multiple instruction sheets, but programming is the same for each. nFORCE® is not compatible with ConfigureIT.